

CLAIMS

1. A system for activating an electronic paint, comprising:
at least two independently movable ultrasonic transducers (20, 22);
an electronic brush (30) including an electronic-brush ultrasonic transducer (32);
and
a controller (40) operably coupled to the two independently movable ultrasonic transducers (20, 22) and the electronic-brush ultrasonic transducer (32), wherein an electronic-brush location with respect to locations of the independently movable ultrasonic transducers (20, 22) is determined from ultrasonic signals communicated between the ultrasonic transducers (20, 22, 32) and received by the controller (40).
2. The system of claim 1 wherein the independently movable ultrasonic transducers (20, 22) are attachable to a surface (52) comprising the electronic paint (50).
3. The system of claim 1 wherein the independently movable ultrasonic transducers (20, 22) are wired or wirelessly connected to the controller (40).
4. The system of claim 1 wherein the electronic-brush ultrasonic transducer (32) is wired or wirelessly connected to the controller (40).
5. The system of claim 1 wherein the controller (40) is located in one of the electronic brush (30) or a digital computing device operably coupled to the electronic brush (30).
6. The system of claim 1 further comprising:
a second ultrasonic transducer (34) attached to the electronic brush (30) and spaced apart from the first electronic-brush ultrasonic transducer (32), wherein ultrasonic signals communicated between the first and second electronic-brush ultrasonic transducers (32, 34) and at least one independently movable ultrasonic transducer (20, 22) allow a determination of an electronic-brush rotation.
7. The system of claim 1 further comprising:
a tilt sensor (36) attached to the electronic brush (30), wherein a tilt signal from the tilt sensor (36) is received at the controller (40) to determine an electronic-brush rotation.
8. A method of activating an electronic paint, comprising:

positioning a first ultrasonic transducer (20) on a surface (52) containing the electronic paint (50);

positioning a second ultrasonic transducer (22) on the surface (52) and spaced apart from the first ultrasonic transducer (20);

sending a first ultrasonic signal between the first ultrasonic transducer (20) and an electronic-brush ultrasonic transducer (32) attached to an electronic brush (30);

sending a second ultrasonic signal between the second ultrasonic transducer (22) and the electronic-brush ultrasonic transducer (32); and

determining an electronic-brush location with respect to the first and second ultrasonic transducers (20, 22) based on the first and the second ultrasonic signals.

9. The method of claim 8 further comprising:

emitting an ultrasonic signal from the first ultrasonic transducer (20) positioned on the surface (52);

receiving the emitted ultrasonic signal at the second ultrasonic transducer (22) positioned on the surface (52); and

determining the distance between a first ultrasonic-transducer location and a second ultrasonic-transducer location based on the emitted ultrasonic signal and the received ultrasonic signal.

10. The method of claim 8 further comprising:

determining an electronic-brush rotation based on ultrasonic signals communicated between the electronic-brush ultrasonic transducer (32), a second electronic-brush ultrasonic transducer (34) spaced apart from the first electronic-brush ultrasonic transducer (32), and at least one of the first and second ultrasonic transducers (20, 22) positioned on the surface (52).

11. The method of claim 8 further comprising:

determining an electronic-brush rotation based on tilt signals from an electronic-brush tilt sensor (36) attached to the electronic brush (30).

12. A system for activating an electronic paint, comprising:

means for sending ultrasonic signals between a plurality of spaced-apart electronic-paint surface locations and an electronic brush (30); and

means for determining an electronic-brush location with respect to electronic-brush surface locations based on the ultrasonic signals.

13. The system of claim 12 further comprising:
means for emitting an ultrasonic signal from a first electronic-paint surface location;
means for receiving the ultrasonic signal at a second electronic-paint surface location; and
means for determining a distance between the first electronic-paint surface location and the second electronic-paint surface location based on the emitted ultrasonic signal and the received ultrasonic signal.

14. The system of claim 12 further comprising:
means for determining an electronic-brush rotation based on ultrasonic signals communicated between a plurality of spaced-apart electronic brush locations and the electronic-paint surface location means.

15. The system of claim 12 further comprising:
means for determining an electronic-brush rotation based on tilt signals sent from the electronic brush.

16. An electronic brush, comprising:
an electronic-brush housing (28); and
at least one ultrasonic transducer (32) attached to the electronic-brush housing (28), wherein ultrasonic signals communicated between the electronic-brush ultrasonic transducer (32) and at least two ultrasonic transducers positioned on a surface allow a determination of an electronic-brush location with respect to locations of the ultrasonic transducers positioned on the surface.

17. The electronic brush of claim 16 further comprising:
a second ultrasonic transducer (34) attached to the electronic brush (30) and spaced apart from the first electronic-brush ultrasonic transducer (32), wherein ultrasonic signals communicated between the electronic-brush ultrasonic transducers (32, 34) and at least one of the ultrasonic transducers positioned on the surface allow a determination of an electronic-brush rotation.

18. The electronic brush of claim 16 further comprising:
a tilt sensor (36) attached to the electronic brush (30), wherein a tilt signal from the tilt sensor (36) allows a determination of an electronic-brush rotation.
19. The electronic brush of claim 16 further comprising:
a controller (40) operably coupled to the electronic-brush ultrasonic transducer (32) to determine the electronic-brush location based on the ultrasonic signals.
20. The electronic brush of claim 19 wherein the controller is located in one of the electronic brush (30) or a digital computing device operably coupled to the electronic brush.